

## **METHOD AND APPARATUS FOR PERFORMING DIAGNOSTICS IN A CONTROL LOOP OF A CONTROL VALVE**

### **Abstract**

5       Method and apparatus for performing diagnostics in a pneumatic control loop  
for a control valve. Pressure and displacement sensors normally provided with a  
positioner are used to detect operating parameters of the control loop. A processor is  
programmed to receive feedback from the sensors and generate fault signals  
according to a logic sub-routine. The logic sub-routine may include calculating mass  
flow of control fluid through spool valve outlet ports and comparing other operating  
10       parameters of the control fluid to detect leaks and blockages in the control loop. Once  
a fault is detected, the location of the root cause of the fault may be identified by  
characterizing operating parameters of the control loop at the time of the fault.